

PTO/SB/17 (12-04)

Approved for use through 07/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).  
Effective 08/22/2004.**FEE TRANSMITTAL**  
**For FY 2005**☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$) 180.00**Complete if Known**

Application Number	10/814,123
Filing Date	April 1, 2004
First Named Inventor	Zheng Zhang
Examiner Name	Kuo-Liang Peng
Art Unit	1712
Attorney Docket No.	3244-126 (formerly 571-932)

**METHOD OF PAYMENT** (check all that apply)☒ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): \_\_\_\_\_☒ Deposit Account Deposit Account Number: **022095** Deposit Account Name: **Bereskin & Parr**

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below☐ Charge fee(s) indicated below, except for the filing fee☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17☒ Credit any overpayments**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

**2. EXCESS CLAIM FEES**

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent	50	25
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent	200	100
Multiple dependent claims	360	180

<b>Total Claims</b>	<b>Extra Claims</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>
- 20 or HP =	0	x	0.00
HP = highest number of total claims paid for, if greater than 20			
<b>Indep. Claims</b>	<b>Extra Claims</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>
- 3 or HP =	0	x	0.00
HP = highest number of independent claims paid for, if greater than 3			

<b>Multiple Dependent Claims</b>	
<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>

**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

<b>Total Sheets</b>	<b>Extra Sheets</b>	<b>Number of each additional 50 or fraction thereof</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>
- 100 =	0	/ 50 =		0

**4. OTHER FEE(S)**

Non-English Specification, \$130 fee (no small entity discount)

Other: Information Disclosure Statement

180.00

**SUBMITTED BY**

Signature	<i>P. Power</i>	Registration No. 51,379 (Attorney/Agent)	Telephone (416) 364-7311
Name (Print/Type)	Patricia Power		Date August 19, 2005

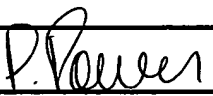
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<b>TRANSMITTAL FORM</b> (to be used for all correspondence after initial filing) AUG 22 2005 PATENT & TRADEMARK OFFICE		Application Number	10/814,123
		Filing Date	August 1, 2004
		First Named Inventor	Zheng Zhang
		Art Unit	1712
		Examiner Name	Kuo-Liang Peng
Total Number of Pages in This Submission	10	Attorney Docket Number	3244-126 (formerly 571-932)

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input checked="" type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Letter to the Commissioner
<b>Remarks</b>		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm	Bereskin & Parr		
Signature			
Printed Name	Patricia Power		
Date	August 19, 2005	Reg. No.	51,379

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
Signature			
Typed or printed name		Date	

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

## Privacy Act Statement

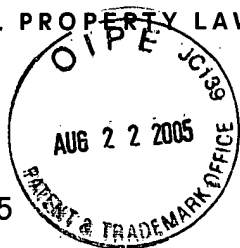
The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

# Bereskin & Parr

INTELLECTUAL PROPERTY LAW



August 19, 2005

Patricia Power B.Sc., Ph.D. (Chem.)  
416 957 1683 ppower@bereskinparr.com

Our Reference: 3244-126 (formerly 571-932)

## INFORMATION DISCLOSURE STATEMENT

The Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
U.S.A.

Dear Sir:

**Re: U.S. Regular Patent Application No. 10/814,123**  
**Filed: April 1, 2004**  
**Entitled: PROTEIN COMPATIBLE METHODS AND COMPOUNDS FOR**  
**CONTROLLING THE MORPHOLGY AND SHRINKAGE OF SILICA DERIVED**  
**FROM POLYOL-MODIFIED SILANES**  
**Inventors: Zheng Zhang, Yang Chen, Jorge A. Cruz-Aguado, Richard J.**  
**Hodgson, Dina Tleugabulova, John D. Brennan and Michael A. Brook**

In accordance with 37 CFR 1.56 and 1.97, the Applicants hereby submit an Information Disclosure Statement including form PTO/SB/08A. In accordance with the waiver by the Office of the requirement under 37 CFR 1.98(a)(2)(i) for applications filed after June 30, 2003, this Information Disclosure Statement is filed without copies of the cited U.S. Patents

Please have this documentation recorded against the above-mentioned application.

This Information Disclosure Statement is filed subsequent to the issuance of the first Office Action. The prescribed fee of \$180.00 is enclosed in our firm cheque. Please charge any additional fees which may be required or remit any excess fees to our deposit account no. 02-2095.

08/23/2005 JADD01 00000160 10814123

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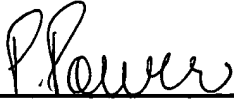
Manulife Corporate Park, 6733 Mississauga Road, Suite 600, Mississauga, Ontario L5N 6J5

Tel: 905.812.3600 Fax: 905.814.0031 [www.bereskinparr.com](http://www.bereskinparr.com)

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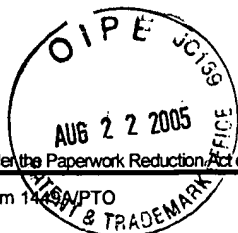
Respectfully submitted,

**ZHENG ZHANG et al.**

A handwritten signature in cursive script, appearing to read 'P. Power', written over a horizontal line.

Patricia Power

Registration No. 51,379



Substitute for form 1449/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 6

**Complete if Known**

Application Number	10/814,123
Filing Date	April 1, 2004
First Named Inventor	Zheng Zhang
Art Unit	1712
Examiner Name	Kuo-Liang Peng
Attorney Docket Number	3244-126 (formerly 571-932)

**U.S. PATENT DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code <sup>2</sup> (if known)			
		US- 5,624,875	04-29-1997	Nakanishi et al.	
		US- 6,531,060	03-11-2003	Nakanishi et al.	
		US- 2001/0041459	11-15-2001	Smith et al.	
		US- 6,303,290	10-16-2001	Liu et al.	
		US- 6,080,402	06-27-2000	Reetz et al.	
		US- 6,090,448	07-18-2000	Wallace et al.	
		US- 4,588,624	05-13-1986	Nygren et al.	
		US- 4,673,584	06-16-1987	Nygren et al.	
		US- 5,074,916	12-24-1991	Hench et al.	
		US- 5,300,564	04-05-1994	Avnir et al.	
		US- 6,048,546	04-11-2000	Sasaki et al.	
		US- 6,210,570	04-03-2001	Holloway	
		US- 6,171,986	01-09-2001	Zhong et al.	
		US- 5,071,674	12-10-1991	Nogues et al.	
		US- 5,243,769	09-14-1993	Wang et al.	
		US- 5,100,841	03-31-1992	Wada et al.	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				
		EP 0363697	04-18-1990	Asahi Glass Company Ltd.		
		WO 01/58562	08-16-2001	University of South Florida		
		WO 98/29350	07-09-1998	Merck Patent GmbH		
		WO 01/01139	01-04-2001	McMaster University		
		CH327722 Chem. Abst. No. 53:40001	03-31-1958	Lonza Elektrizitatswerke und Chemische Fabriken Akt.		

Examiner  
SignatureDate  
Considered

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**(Use as many sheets as necessary)**

Sheet	2	of	6
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**Complete if Known**

<i>Application Number</i>	10/814,123
<i>Filing Date</i>	April 1, 2004
<i>First Named Inventor</i>	Zheng Zhang
<i>Art Unit</i>	1712
<i>Examiner Name</i>	Kuo-Liang Peng
<i>Attorney Docket Number</i>	3244-126 (formerly 571-932)

## U.S. PATENT DOCUMENTS

[illegible]

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				
		DE1136114 Chem. Abst. No. 57:62506	07-16-1960	Farbenfabriken Bayer Akt.		
		English Language Translation of Abstract of JP07102216	04-18-1995	Shin Etsu Chem Co Ltd		

**Examiner  
Signature**

Date Considered

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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Sheet 3 of 6

**Complete if Known**

Application Number	10/814,123
Filing Date	April 1, 2004
First Named Inventor	Zheng Zhang
Art Unit	1712
Examiner Name	Kuo-Liang Peng
Attorney Docket Number	3244-126 (formerly 571-932)

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	1.	CABRERA, K. et al., "SilicaROD™ - A new challenge in fast high-performance liquid chromatography separations", Trends in Analytical Chemistry, 1998, pp. 50-53, Vol. 17, No.1.	
	2.	TANAKA, N. et al., "Monolithic Silica Columns for HPLC, Micro-HPLC, and CEC", J. High Resol. Chromatogr., 2000, pp. 111-116, Vol. 23, No. 1.	
	3.	ISHIZUKA, N. et al., "Preparation and Chromatographic Application of Macroporous Silicate in a Capillary", Journal of Sol-Gel Science and Technology, 2000, pp. 371-375, Vol. 19.	
	4.	MOTOKAWA, M. et al., "Monolithic silica columns with various skeleton sizes and through-pore sizes for capillary liquid chromatography", Journal of Chromatography A, 2002, pp. 53-63, Vol. 961.	
	5.	ISHIZUKA, N. et al., "Chromatographic characterization of macroporous monolithic silica prepared via sol-gel process", Colloids and Surfaces - A: Physicochemical and Engineering Aspects, 187-188, 2001, pp. 273-279.	
	6.	KANG, J. et al., "A silica monolithic column prepared by the sol-gel process for enantiomeric separation by capillary electrochromatography", Electrophoresis, 2002, pp. 1116-1120, Vol. 23.	
	7.	KIKUTA, K. et al., "Synthesis of Transparent Magadiite-Silica Hybrid Monoliths", Chem. Mater., 2002, pp. 3123-3127, Vol. 14.	
	8.	LEINWEBER, F. C. et al., "Characterization of Silica-Based Monoliths with Bimodal Pore Size Distribution", Anal. Chem., 2002, pp. 2470-2477, Vol. 74.	
	9.	NAKANISHI, K. et al., "Macropore Morphology Control of Silica Gel by Spinodal Decomposition", Chemical Processing of Advanced Materials, 1992, pp. 29-41	
	10.	NAKANISHI, K. et al., "Macropore Structure Design of Sol-Gel Derived Silica by Spinodal Decomposition", Porous Materials, 1993, pp. 51-60.	
	11.	GILL, I. et al., "Encapsulation of Biologicals within Silicate, Siloxane, and Hybrid Sol-Gel Polymers: An Efficient and Generic Approach", J. Am. Chem. Soc., 1998, pp. 8587-8598, Vol. 120.	
	12.	GILL, I., "Bio-doped Nanocomposite Polymers: Sol-Gel Bioencapsulates", Chem. Mater., 2001, pp. 3404-3421, Vol. 13.	
	13.	NAKANISHI, K. et al., "Synthesis of silica gel by polymer-mixed sol-gel method", Chem. Abstracts, AN. 118:259529, Shinsozai (1992), pp. 44-49, Vol. 3, No. 11.	
	14.	TANAKA, N. et al., "Octadecylsilylated porous silica rod for reversed-phase liquid chromatography", Chem. Abstracts, AN. 121:92756, Kuromatogurafi (1993), pp. 50-51, Vol. 14, No. 5.	

Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 4 of 6

**Complete if Known**

Application Number	10/814,123
Filing Date	April 1, 2004
First Named Inventor	Zheng Zhang
Art Unit	1712
Examiner Name	Kuo-Liang Peng
Attorney Docket Number	3244-126 (formerly 571-932)

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	15.	FRYE, C.L., "Stable Silicon Heterocyclic Derivatives of Branched Alkanediols", The Journal of Organic Chemistry, 1969, pp. 2496-2499, Vol. 34, No. 9.	
	16.	VORONKOV M.G. et al., Chem. Abst. No. 69:58787, "Spirocyclic orthosilicic acid esters", Z. Chem., 1968, pp. 252-253, Vol. 8, No. 7	
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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 5 of 6

**Complete if Known**

Application Number	10/814,123
Filing Date	April 1, 2004
First Named Inventor	Zheng Zhang
Art Unit	1712
Examiner Name	Kuo-Liang Peng
Attorney Docket Number	3244-126 (formerly 571-932)

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	26.	KINRADE, S.D. et al., "Aqueous hypervalent silicon complexes with aliphatic sugar acids", J. Chem. Soc., Dalton Trans., 2001, pp. 961-963.	
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Substitute for form 1449B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(Use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				<i>Application Number</i>	10/814,123
				<i>Filing Date</i>	April 1, 2004
				<i>First Named Inventor</i>	Zheng Zhang
				<i>Art Unit</i>	1712
				<i>Examiner Name</i>	Kuo-Liang Peng
				<i>Attorney Docket Number</i>	3244-126 (formerly 571-932)
				Sheet	6

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Examiner Signature		Date Considered	
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